

58. A method according to claim 56 said second heating is performed in a nitrogen atmosphere.--

REMARKS

The Official Action of May 26, 1998 was received and its contents carefully reviewed. Reconsideration and withdrawal of the currently pending rejections are requested for the reasons advanced in detail below.

A Petition for a One-Month Extension of Time is also being filed simultaneously herewith to extend the time period for response to September 26, 1998. Consequently, the instant preliminary amendment and accompanying CPA request should be considered timely filed.

Claims 24-55 are pending in the subject application prior to this amendment. By this amendment, claims 24, 31, 32, 38, 40, 41, 47, 49, 50, and 55 are amended, and new claims 56-58 are added. Consequently, claims 24-58 are currently pending in the instant application.

Referring to the rejection under 35 U.S.C. 112, second paragraph, the claims are amended to correct the informalities as noted by the Examiner.

With respect to the phrase "said light fuses a surface..." as recited in claims 31, 40, 49, and 55, the applicants intention was that the surface of the semiconductor film is melted by the irradiation. Therefore, these claims are amended to change "fuses" to --melts--.

With respect to claim 41, the channel forming region is finally formed by patterning the crystallized semiconductor film, forming a gate electrode, introducing impurities for source and drain regions, etc. These steps should not be required to be included in claim 41 since these particular steps are not critical

to the invention. Therefore, Applicants contend there is no problem in claiming "forming a channel forming region." Claim 41 is amended to recite that the channel region is formed in the semiconductor film.

The present invention is directed to a method of manufacturing a semiconductor device having a crystallized semiconductor film which has been crystallized with the aid of a catalyst material. In accordance with the present invention, an amorphous semiconductor film is initially crystallized by heating with the aid of the catalyst material. After the crystallization, the crystallinity of the film is further increased by irradiation with laser light. The primary feature of the present invention resides in the use of another heating step performed at a temperature not lower than 450°C after the laser irradiation to reduce defects since the inventors recognized that the laser irradiation creates defects in the semiconductor film, while increasing the crystallinity of the semiconductor film.

With regard to the prior art rejection and the double patenting rejection, Applicants contend that none of the references teaches or suggests the claimed invention as recited by the amended claims.

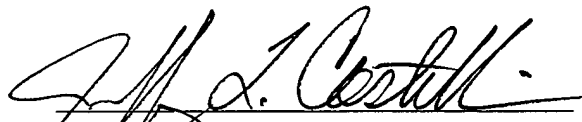
Applicants also wish to clarify that Fig. 5 of Zhang '937 is not relevant to the claimed second heating step of the present invention. Fig. 5 of Zhang '937 shows a temperature profile during a laser annealing step. Applicants understand that the Examiner is contending that the post heating time "f" corresponds to the claimed second heating step. It should be noted, however, that the preheating and the postheating of Fig. 5 are merely to avoid the semiconductor film from peeling due to a temperature variation (column 8, lines 17-20). On the other hand, since the claimed second heating is to reduce the defects caused by the laser irradiation, it is conducted at a sufficiently long time (i.e., 4 hours) in the preferred embodiments of the present invention. Consequently, the second heating step of

the present invention can be distinguished from the preheating and postheating steps of Zhang '937.

New claim 56 is added to delete the limitation of using the catalyst. Also, the limitation of "plurality of shots" is disclosed in page 18 of the specification (Embodiment 1).

In view of the foregoing, it is respectfully requested that the rejections of record be reconsidered and withdrawn, that pending claims 24-55 and new claims 56-58 be allowed and that the application be passed to issue. If a conference would be beneficial in expediting the prosecution of the instant application, the Examiner is hereby invited to telephone the undersigned to arrange such a conference.

Respectfully submitted,



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